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10 CFR 50.4

ComEd

February 29, 2000

PSLTR #00-0046

U.S. Nuclear Regulatory Commission
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Washington, DC 20555

Dresden Nuclear Power Station, Units 2 and 3
Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Subject: Results of Dresden Nuclear Power Station Control Room Heating, Ventilation, and Air Conditioning (HVAC) System Test Simulation to Measure Restoration Time During a LOOP/LOCA

Reference:
1.) Letter from J. M. Heffley (ComEd) to US NRC, "Request for Additional Information (RAI) Regarding Control Room Heating, Ventilation, and Air Conditioning (HVAC) Dampers (TAC NOS. M97953 and M97954)," dated March 15, 1999

2.) Letter from L. W. Rossbach (US NRC) to O. D. Kingsley, "Request for Additional Information (RAI) Dresden Nuclear Power Station, Units 2 and 3 (TAC NOS. M97953 and M97954)," dated January 12, 1999

The purpose of this letter is to transmit the results of a test performed at the Commonwealth Edison Company (ComEd) Dresden Nuclear Power Station in response to a request from the NRR Project Manager following a teleconference held on December 14, 1999. This test was conducted in order to measure the station's ability to restore the Main Control Room Heating, Ventilation and Air Conditioning (HVAC) System following a LOOP/LOCA.

The purpose of the teleconference (December 14, 1999) was to provide clarification to our response provided in Reference 1 to the questions asked in Reference 2. As a result of the NRC's review of Reference 1, the focus was on the use of operator actions to restore the Main Control HVAC System. The NRC used Information Notice 97-78, "Crediting of Operator Actions in Place of Automatic Actions and Modifications of Operator Actions, Including Response Times," to complete their evaluation of Licensee Event Report (LER) 237-1996-003, "Main Control Room HVAC Outside of Design Basis Due to Inadequate Implementation of Modification." This LER indicated that Dresden Station emergency procedure DGA-12, "Partial or Complete Loss Of AC Power", was revised as necessary to allow operators to reestablish pressurization to the control room

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by realigning the failed dampers and booster fans after a LOOP coincident with a LOCA. The LER indicated that the Operations Department performed a walkdown and "that the actions required to start the control room air filters can be accomplished in the allowed time." During this discussion, our HVAC System Engineer described a test that had been developed to measure the time response in Dresden Operating Abnormal (DOA) procedure DOA 5750-01, "Ventilation System Failure." The Project Manager-NRR requested submittal of the information discussed during the teleconference.

The test scenario was developed by the system engineer in cooperation with the Operations department to validate that the system could be restored within forty minutes. The scenario was performed without advance notice to the participants in the Main Control Room. The result of the test concluded that the HVAC system could be manually aligned to the accident mode within the required forty minutes in the event of a LOOP/LOCA as specified in procedure DOA 5750-01 and is attached to this letter. Based on the results of the test, the system will meet the radiation dose limits specified in General Design Criteria (GDC) 19, "Control Room."

Should you have any questions concerning this letter, please contact Mr. Dale Ambler at (815) 942-2920 extension 3800.

Respectfully,

Preston Swafford
Site Vice President
Dresden Nuclear Power Station

ATTACHMENT

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Dresden Nuclear Power Station

ATTACHMENT
Control Room HVAC System Simulation

Dresden procedure DOA 5750-01, "Ventilation System Failure," states "During the Loss of Coolant Accident (LOCA), Control Room HVAC must be isolated AND an Air Filtration Unit (AFU) Booster Fan started WITHIN 40 MINUTES."

A Control Room scenario was requested to be performed to simulate a Loss of Coolant Accident concurrent with a Loss Of Offsite Power. This simulation would be performed in the Control Room without prior notification or knowledge on the part of the Control Room operators. A system engineer would be present in the Control Room to monitor and time the operator actions required to isolate the Control Room and start the Control Room HVAC System AFU with one booster fan. Additionally, equipment failures would be inserted in the scenario to simulate potential single-point damper failures and allow evaluation of the additional time required to properly start and align the HVAC System.

The simulation was initiated by a Shift Manager who entered the Work Execution Center and requested an operator to assist the system engineer in the simulation of the Loss Of Offsite Power and an alarmed Area Radiation Monitor located in the Reactor Building Exhaust duct. As a result, the Control Room B Train HVAC System, Air Filtration Unit, and one Booster Fan was required to be started in accordance with procedure DOA 5750-01.

The operator entered the Control Room and advised the Unit Supervisor of the requested scenario. At this time the system engineer initiated a stopwatch to time the performance of the simulation. The stopwatch utilized to time the simulation was properly calibrated.

The operator then simulated realignment of power to Bus 29. This provides power to MCC 29-8 Control Room HVAC System Power Supply, in accordance with DGA 12, "Partial or Complete Loss of AC Power." The operator then proceeded to obtain a copy of DOA 5750-01 and began to simulate the start of the Control Room HVAC System B Train, Air Filtration Unit (AFU), and one Booster Fan. During the scenario, while proceeding to start the AFU and Booster Fan, the system engineer stated that the Outside Air Bypass Damper 2/3-5741-057 had failed in the open position and the Booster Fan A Outlet Damper 2/3-5741-055 had failed in the closed position. The operator had to obtain a ladder and simulate the manual closure of damper 2/3-5741-057 and the manual opening of damper 2/3-5741-055.

The entire simulation including proper isolation and alignment of the Safety Related B Train HVAC System, Air Filtration Unit, and one Booster Fan was performed in an elapsed time of thirty-one (31) minutes. Through the postulation of the two additional damper failures identified, the scenario actually went beyond the single failure criteria.

This simulation proved that the Control Room HVAC System B Train, Air Filtration Unit, and one Booster Fan can be properly started within Forty (40) minutes with a Loss Of Offsite Power (LOOP) and a Loss of Coolant Accident (LOCA).